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TITLE

STATUS OF MOUNTAIN PINE BEETLE INFESTATION
ON THE CLEARWATER NATIONAL
FOREST AND ON LANDS ADMINISTERED
BY THE CLEARWATER TIMBER PROTECTIVE
ASSOCIATION - 1944

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STATUS OF MOUNTAIN PINE BEETLE INFESTATION
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On the Clearwater National Forest six units and on lands of the Clearwater Timber Protective Association five units were examined during the late summer of 1944 to determine the status of losses caused by the mountain pine beetle. Shortage of man power and time made it necessary to restrict examination to a very small sample of the total area or to a general reconnaissance on lightly infested areas. Naturally, data from such limited examinations may not accurately indicate conditions on the area to which it applies, but is presented as being the best information available. A summary of the data is given in Table I, followed by a more detailed discussion of conditions on each unit.

Table I
Clearwater National Forest
Units Surveyed in 1944

Mountain Pine Beetle Infested Trees

<u>Unit</u>	<u>Acres</u>	<u>per acre</u>			<u>on unit</u>			<u>Percent of stand attacked in 1944</u>	
		<u>1942</u>	<u>1943</u>	<u>1944</u>	<u>1942</u>	<u>1943</u>	<u>1944</u>		
Deadhorse	1,280	.74	.40	.32	947	512	418	.8	12 40
Tepee Cr.	1,280	.60	.73	.16	768	932	205	.8	20
Washington Creek (1)	500	no data		.64	no data		320	.9	71.
Grande	24,000	.07	.07	.10	1568	1704	251	.1	100.
Osier-Decep- tion Creek	6,400	no data		.275	no data		1760	1.5	18
Cedars - N. Pk.	3,500	no data		.1	no data		350	--	

Clearwater Timber Protective Association

<u>Unit</u>	<u>Acres</u>	<u>per acre</u>			<u>on unit</u>			<u>Percent of stand attacked in 1944</u>
		<u>1942</u>	<u>1943</u>	<u>1944</u>	<u>1942</u>	<u>1943</u>	<u>1944</u>	
Tepee Cr.	640	1.25	.21	.21	800	137	137	.7
Butte Cr.	4800	.5	.58	.26	1000	2070	1248	.3
Thompson Cr.	1700	.20	.43	.06	340	793	102	.1
Scofield-Wash- ington Creek	3200	no data		.77	no data		2464	1.25
Orogrande	3720	.73	.69	.60	2716	2599	2232	2.4

25 gr

(1) Includes both National Forest and alienated lands. A more limited area than was included in the original unit.

Clearwater National Forest

Deadhorse Unit

Acreage 1280

Attacked trees per acre	.32
Percent of stand killed	.8
Attacked trees on unit	418
Green trees per acre	40
Percent of stand mature or older	95

40.

A slight decrease in total infestation is indicated for 1944 for this unit. Windfalls and trees with tops broken out comprised 30 percent of the total infested and an additional 15 percent were pitched out. With only 32.5 percent of the attacked trees containing heavy brood the infestation seems to be declining in aggressive potential danger to the stand on this unit.

Tepee Creek Unit

Acreage 1280

Attacked trees per acre	.16
Percent of stand killed	.8
Attacked trees on unit	204
Green trees per acre	20
Percent of stand mature or older	88

A comparison of data for 1944 and 1943 indicates a decided decrease in number of attacked trees on this unit in 1944. Windfalls comprised about 38 percent of total trees attacked in 1944 in contrast to 58 percent the previous year. About 55 percent of the attacked trees contained a heavy brood.

Clearwater Timber Protective Association

Washington Creek (W.F. and C.T.P.A.)

Acreage 500

Attacked trees per acre	.64
Percent of stand killed	.9
Attacked trees on unit	320
Green trees per acre	71
Percent mature or older	10

The concentration of infestation on this unit is confined to a comparatively narrow strip on the north side of Washington Creek in sec. 30 and 31, T. 39 N., R. 7 E and in sec. 25, 35 and 36, T. 39 N., R. 6 E. Ridges and east to south to west exposures, support the most infestation.

Although the appearance of both the attacked trees and the stand of which they are part is that of immaturity, losses of from 10 to 50 in various parts of the area and averaging 20 percent for such areas have occurred in the recent past and considerable infestation is still present. However, with less than 50 percent of the infested trees containing heavy brood, the infestation cannot be considered as potentially serious.

Orogrande Unit (W.F.)

Acreage 24,000

Attacked trees per acre	.045
Percent of stand killed	.044
Attacked trees on unit	1080
Green trees per acre	102
Percent of trees mature or older	44

1020

A comparison of data for the two years shows an indicated decrease of about 37 percent in 1944. Survey was limited to but one area in 1944. That was the only part of the unit which had shown a slight concentration in infestation in 1943 and the 1944 estimate for the unit was based on a comparison of the data from that area for the two years.

Osier-Deception Creek Unit

Acreage 6400

Attacked trees per acre	.275
Percent of stand killed	1.0
Attacked trees on unit	1760
Green trees per acre	28
Percent mature or older	62.5

This unit includes the following sections in T. 40 N., R. 11 E. SW $\frac{1}{4}$ of sec. 7, sec. 8, SW $\frac{1}{4}$ of sec. 9, W $\frac{1}{4}$ of sec. 15, sec. 16.

17, 18, 19, 20, 21 and W $\frac{1}{2}$ of sec. 22. In T. 40 N., R. 10 E. it included SW $\frac{1}{4}$ of sec. 13 and NE $\frac{1}{4}$ of sec. 24. Within this unit a loss of mature and overmature western white pine varying from 20 to 25 percent on different parts of the area and averaging about 30 percent for the unit as a whole has occurred in the recent past, as a result of mountain pine beetle attack, and is continuing. Losses in the last two years have been about 1.0 percent of the green western white pine stand annually. Judging by the many mountain-pine-beetle-killed western white pine snags on the area, heavy annual losses have occurred sometime within the past 10 to 15 years prior to 1943. These past and present losses have seriously reduced both the volume of the reserve stand on the area and its value. About 60 percent of the merchantable western white pine is overmature and of comparatively large size.

Although infestation is general over the entire unit, wherever mature and overmature timber is present, some areas show heavier losses than others. Such an area adjoins the U - bend in Deception Creek in sections 17 and 18.

It is believed that from their general appearance, that by the end of the season between 50 and 75 percent of the infested trees will contain heavy brood, indicating a potential increase in infestation in 1945.

Cedars - North Fork Unit

Acreage 3500

The area included in this unit extends from Shell Creek on Lake Creek to Cedars R.S., then southwest along the river to the burned area a short distance below Fix Creek. Much of this area contains little or no white pine, but a rough estimate of what is visible from the road, indicates about 3500 acres support more or less of that species. On that area about 140 red and fading top white pine were noted. They are believed to be about 40 percent of the total infestation, or 350 trees on the entire unit.

Tepes Creek (C.T.P.A.)

Acreage 640

Attacked trees per acre	.21
Percent of stand killed	.7
Attacked trees on unit	137
Green trees per acre	32
Percent of trees mature or older	100

The amount of infestation on this area remains unchanged, as compared with 1943. However, proportion of windfalls has decreased from 43 in 1943 to about 12.5 percent in 1944 and heavily attacked trees in 1944 amount to 62.5 percent of the total. This may indicate

a potentially more serious infestation than was present in 1943.

Butte Creek Unit

Acreage 4800

Attacked trees per acre	.26
Percent of stand killed	.3
Attacked trees on unit	1248
Green trees per acre	82.8
Percent mature or older	100

This unit also shows a decided decrease in number of infested trees in 1944. Trees with a light brood amounted to 62.5 percent and those pitched-out to 12.5 percent of the total attacked trees on this unit. With only 25 percent having heavy brood, the indications are that a further decrease in infestation may occur in 1945.

Thompson Creek Unit

Acreage 1700

Attacked trees per acre	.06
Percent of stand killed	.08
Attacked trees on unit	100
Green trees per acre	72.9
Percent mature or older	100

Infestation has apparently decidedly decreased on this area since 1943. Furthermore only a medium brood was found in the infested trees, too few to be a serious threat for the coming year.

Scofield - Washington Creek

Acreage 3200

Attacked trees per acre	.76
Percent of stand killed	1.25
Attacked trees on unit	2432
Green trees per acre	60
Percent of trees mature or older	100

Report by Messrs. Curtis and Space of the O.T.P.A., of considerable loss from the mountain pine beetle in western white pine, on an area chiefly to the south and east of Scofield Lookout, led the writer to examine this area. A light epidemic condition exists on approximately five sections. The timber is a mixture of species of large individual trees forming a dense crown canopy. These large, overmature trees are being logged from the new camp on Washington Creek. About 1 1/4 percent of the western white pine stand was infested in 1944. Of the infested trees about one-fourth are windfalls.

Orogrande Unit (C.T.P.A.)

Acreage 3720

This area has supported an outbreak of the mountain pine beetle

in lodgepole pine for a number of years. It has decidedly depleted that timber type on part of the area and continued heavy, although diminishing losses, are occurring. The restriction of mountain pine beetle activity to lodgepole pine, in spite of the presence of western white pine of susceptible size intermingled with and often closely adjacent to infested lodgepole pine, is the surprising status of this infestation. This condition serves to strengthen the belief that the mountain pine beetle may develop host preferences after a number of generations of development in one host.

Extensive examination of other areas on the Clearwater National Forest and adjoining lands revealed the following conditions:

Headwaters of the North Fork of the Clearwater River and its nearby tributaries, Bostonian, and Caledonia Creeks, showed no red-top or fading western white pine. Upper Meadow, Upper Copper, Upper Skull and Birch Creeks revealed a similar condition. Only a very light infestation was observed in Upper Quartz, Fly, Hidden and Elizabeth Creeks.

Orogrande Creek

Judging by red-tops observed, there are fewer infested trees between Cache Creek and the Bungalow Ranger Station than there were in 1943. The small groups of red-tops noted last year have been replaced by scattered single trees in 1944.

From Cache Creek to Pierce, along the Pierce - Bungalow Road, only occasional single red-top western white pine were noted.

Benton Creek

Infestation in western white pine apparently about same as in Thompson Creek.

Mud Creek Vicinity

Report by the Forest Supervisor of infestation increasing in the drainages adjacent to the Mud Creek Lookout, prompted an examination of that area. It was found that the major portion of the infestation reported was in Douglas fir, that in western white pine being too light to cause concern.

Grandad, and Telephone Creeks, in the north western part of the region, showed light infestations of the mountain pine beetle.

Summary

Over the national forest lands as a whole, analysis of the data reveals a reduction of infestation by the mountain pine beetle in 1944. On the Deadhorse, Teepee, and Washington Creek areas the percent of stand attacked is from .8 to .9. In arriving at these figures all green and attacked trees, 8 inches in diameter breast high and larger, were counted. When current losses are not serious, we may be inclined to overlook this annual depletion, but decreasing merchantable stands of western white pine and a strong demand for that species, make it necessary that we realize the true import of these persistent losses on the final value of stands susceptible to mountain pine beetle attack.

On areas such as the Osier - Deception Creeks Unit, only a brief inspection of the area is required to indicate, from the many bark-beetle-killed trees, how serious has been both volume and timber grade loss. Much of the high grade timber is dead, leaving some of similar value, but with a majority of the remaining volume in lower grade, smaller diameter trees.

On other than national forest lands, in the more inaccessible areas, a similar condition exists. Losses on other than national forest holdings on Teepee Creek, have been heavy and were closely similar to those on the national forest portion of the same drainage.

On the Scofield - Washington Creek area, losses were similar to those on the Osier - Deception Creek Unit in that they were in large overmature timber of high value, but no such volume of loss had occurred. The present lumbering operation in that stand should remove bark-beetle losses from consideration for a number of years.

The high percent of loss occurring in lodgepole pine near the old Oxford Ranger Station site, is only given casual mention because lodgepole pine is of low relative value in the Clearwater region.

Status of Other Insect Activity

Douglas fir beetle

Losses have decidedly decreased on both Thompson and Butte Creeks.

On Orogrande Creek and along the Bungalow - Pierce Road, losses appear to have decreased although considerable infestation is still present.

From the Mud Creek Lookout an infestation amounting to from .1 to .2 trees per acre and in groups of as much as 5 to 15 finding

trees, was observed.

Grandad Creek showed a somewhat heavy infestation.

An active infestation is present on Benton Creek with one group of 50 fading trees being noted.

Losses from the Douglas fir beetle were general over this region in 1944 but believed to be lighter than for the preceding year.

It is to be hoped that the time is not far distant when the drain on Douglas fir stands, which have been occurring for a number of years, will be looked upon with more concern than that shown up to the present. Serious losses have and are now taking place in this timber species but the general low value placed on Douglas fir has prevented all but a few local control projects.

Larch Saw Fly

Light defoliation was noted on a few acres on Orogrande Creek near Cottonwood Creek.

On French Creek near its mouth and for a short distance below defoliation varying from practically none to complete and averaging about 10 percent occurred in 1944.